BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 5/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
5	Diversion of water course by providing coffer dams or bunds or islands as may be necessary for piers and abutments foundations, bailing out or pumping water during excavation and until completion etc… complete beyond 1.50m depth upto & including 3m depth all leads and lifts as directed by the Engineer in charge of the work.						
		Cum					
	Proposal Culvert						
	Culvert-1		1	15.00	(1.00+.75)/2	0.60	7.88
	Culvert-2		1	13.00	(1.00+.75)/2	0.60	6.83
						Total	14.70
						Net Quantity	14.70

CONSULTING ENGINEERS PMC Bangalore

Assistant Engineer, 5/11/2018
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 5/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
7	**KSRRB M2100-2.1 Earth work in excavation** for foundation of structures such as culverts, bridges etc., as per drawing and technical specifications,including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications in **Ordinary soil - B. Machanical Means** (i) Depth upto 3m MORTH Specification No. 304 as directed by the Engineer in charge of the work.						
	For Culvert Slab Culvert -1	Cum	1	7.30	4.22	0.90	27.73
						TOTAL	**27.73**

CONSULTING ENGINEERS Bangalore PMC

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

Measurement recorded on 5/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
8	**KSSRB M2100-5.1 Earth work Excavation** for foundation of structures as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications as per MORTH specification No.304 . in **Marshy soil upto 3m depth**(By manual means) as directed by the Engineer in charge of the work.						
	For SSM Wall	Cum	1	7.30	4.22	2.10	64.69
						TOTAL	**64.69**

CONSULTING ENGINEERS Bangalore PMC

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 8/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
10	**Providing and filling** in foundation with Granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming,watering, including cost of all materials and labour with all lead and lift.complete as per specifications as directed by the Engineer in charge of the work.**(SR2018-19 P7/2.15)**						
	For Culvert C-1	CUM	1	7.3	4.22	0.30	9.24
						Total	**9.24**

PMC Bangalore

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

	Measurement recorded on 9/11/2018						
S.N	**Description**	**Unit**	**No.**	**L**	**B**	**D**	**Qty**
12	KSRRB M2100-10 - Plain Cement Concrete **M10 with OPC** cement @ 220 kgs, with crushed 40mm and down size graded metal coarse aggregates @0.84 Cum and fine aggregates @ 0.56Cum, in foundation mechanically mixed placed in foundation and compacted by vibration including curing for 14 days complete as per specifications MORTH Specification No.2100 all leads and lifts as directed by the Engineer in charge of the work.**(SR2018-19 P222/27.18)**						
	For Culvert	CUM					
	Culvert-1		1	7.30	4.22	0.15	**4.62**
						Total	**4.62**

BMC Bangalore

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 9/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
7	**KSRRB M2100-2.1 Earth work in excavation** for foundation of structures such as culverts, bridges etc., as per drawing and technical specifications,including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications in **Ordinary soil - B. Machanical Means** (i) Depth upto 3m MORTH Specification No. 304 as directed by the Engineer in charge of the work.						
	For Culvert Slab Culvert -2	Cum	1	7.50	3.96	0.90	26.73
						TOTAL	**26.73**

CONSULTING ENGINEERS Bangalore

Assistant Engineer,
PMC SWD Dasarahalli Zone,BBMP.

9/11/2018

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

Measurement recorded on 9/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
8	**KSSRB M2100-5.1 Earth work Excavation** for foundation of structures as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications as per MORTH specification No.304 . in **Marshy soil upto 3m depth**(By manual means) as directed by the Engineer in charge of the work.						
	For SSM Wall	Cum	1	7.50	3.96	2.05	60.89
						TOTAL	**60.89**

CONSULTING ENGINEERS Bangalore

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

9/11/2018

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 13/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
10	**Providing and filling** in foundation with Granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming,watering, including cost of all materials and labour with all lead and lift.complete as per specifications as directed by the Engineer in charge of the work.**(SR2018-19 P7/2.15)**						
	For Culvert C-2	CUM	1	7.5	3.96	0.30	8.91
						Total	**8.91**

CONSULTING ENGINEERS * BVH * Bangalore PMC

13/11/2018

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

Measurement recorded on 15/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
12	KSRRB M2100-10 - Plain Cement Concrete **M10 with OPC** cement @ 220 kgs, with crushed 40mm and down size graded metal coarse aggregates @0.84 Cum and fine aggregates @ 0.56Cum, in foundation mechanically mixed placed in foundation and compacted by vibration including curing for 14 days complete as per specifications MORTH Specification No.2100 all leads and lifts as directed by the Engineer in charge of the work.**(SR2018-19 P222/27.18)**						
	Culvert-2		1	7.50	3.96	0.15	4.46
						Total	**4.46**

CONSULTING ENGINEERS * BVH * Bangalore PMC

29/11/2018

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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Name of Work: Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

BOQ-19

Supplying,fitting and placing TMT bar reinforcement in super-structure complete as per drawing and technical specifications complete as per specifications. TMT Bars Fe 500 all leads and lifts as directed by the Engineer in charge of the work.

SL No.	DESCRIPTION	Shape of Bar	Dia of Bar (mm)	Spacing (M)	Nos			Cut Length in (M)	Total Length in (M)					
									10	12	16	20	25	32
	Culverts-1													
	Culveret													
	Length = 7.50													
	Raft Bottom Bar		16	0.20	1	40	1	5.72	-	-	228.80	-	-	-
	Raft Top Bar		16	0.125	1	62	1	4.52	-	-	280.24	-	-	-
	Dirtribution		10	0.20	2	25	1	7.50	375.00	-	-	-	-	-
	Inner Wall		12	0.20	2	42	1	3.90	-	327.60	-	-	-	-
	outer Wall		12	0.20	2	39	1	2.70	-	210.60	-	-	-	-
	Haunch		10	0.20	4	39	1	1.50	234.00	-	-	-	-	-
	Dirtribution		10	0.20	4	9	1	7.50	270.00	-	-	-	-	-
	Chairs		12		2	8	1	1.50	-	24.00	-	-	-	-
	U Bar		12		2	6	2	1.00	-	24.00	-	-	-	-
								Total Length (Rmt)	879.00	586.20	509.04	-	-	-
								Unit weight of bar	0.617	0.888	1.567	2.469	3.850	6.310
								Total quantity in KG	542.340	520.550	797.670	-	-	-
								1860.56 Grand quantity	1.86 Tonne					

Assistant Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

Executive Engineer (SWD)
BBMP- SWD, Dasarahalli Zone
Bengaluru

Assistant Executive Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

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As Directed by the Engineer in Charge of the work

SL No.	DESCRIPTION	Shape of Bar	Dia of Bar (mm)	Spacing (M)	Nos		Cut Length in (M)	Total Length in (M)					
								10	12	16	20	25	32
	Culverts-2												
	Culveret												
	Length = 7.50												
	Raft Bottom Bar		**16**	0.20	1	**40**	1	5.46	-	-	218.40	-	-
	Raft Top Bar		**16**	0.125	1	**62**	1	4.26	-	-	264.12	-	-
	Dirtribution		**10**	0.20	2	**24**	1	7.50	360.00	-	-	-	-
	Inner Wall		**12**	0.20	2	**42**	1	4.00	-	336.00	-	-	-
	outer Wall		**12**	0.20	2	**39**	1	2.80	-	218.40	-	-	-
	Haunch		**10**	0.20	4	**39**	1	1.50	234.00	-	-	-	-
	Dirtribution		**10**	0.20	4	**9**	1	7.50	270.00	-	-	-	-
	Chairs		**12**		2	**8**	1	1.50	-	24.00	-	-	-
	U Bar		**12**		2	**6**	1	1.00	-	12.00	-	-	-
								Total Length (Rmt)	864.00	590.40	482.52	-	-
								Unit weight of bar	0.617	0.888	1.567	2.469	3.850
								Total quantity in KG	533.090	524.280	756.110	-	-
								Sub quantity	**1.81 Tonne**				

1813.48

Assistant Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

16/11/2018

Executive Engineer (SWD)
BBMP- SWD, Dasarahalli Zone
Bengaluru

Assistant Executive Engineer
BBMP- SWD, Dasarahalli Zone
Bengaluru

CONSULTING ENGINEERS Bangalore

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 29/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
15	**KSRRB M 2100-17.2 : Plain/reinforcement Cement Concrete** design mix M35 with OPC cement @390 kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.68Cum and fine aggregates @0.45Cum with superplastisiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, **open foundation** complete as per Drawing and Technical Specification with BAtching plant, transit mixer and concrete pump. MORTH Specification No. 1500, 1700 & 2100 all leads and lifts as directed by the Engineer in charge of the work.						
	For Culvert -1	Cum	1	7.30	4.22	0.35	10.78
						Total	10.78

PMC

GRnw/29/11/2018
Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

Measurement recorded on 29/11/2018

S.N	Description	Unit	No.	L	B	D	Qty
15	**KSRRB M 2100-17.2 : Plain/reinforcement Cement Concrete** design mix M35 with OPC cement @390 kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.68Cum and fine aggregates @0.45Cum with superplastisiser @ 3lts confirming to IS9103-1999 Reaffirmed-2008, **open foundation** complete as per Drawing and Technical Specification with BAtching plant, transit mixer and concrete pump. MORTH Specification No. 1500, 1700 & 2100 all leads and lifts as directed by the Engineer in charge of the work.						
	For Culvert -2	Cum	1	7.50	3.96	0.35	10.40
						Total	10.40

PMC

GRnw/29/11/18
Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 5/12/2018

Sl No	Description	Unit	No.	L	B	D	Qty
	KSRRB M 2200-5.12 : Design mix M35 sub structure with OPC cement @390kgs, with 20mm and down size graded granite metal coarse aggregates @0.68Cum and fine aggregates @0.45Cum with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 upto 5 mtrs. Upto 5 Mtrs height all leads and lifts as directed by the Engineer in charge of the work.						
	Culvert-1	Cum	2	7.30	0.30	1.50	6.57
	Hunch Concrete						
	Culvert-1	Cum	4	7.30	0.3/2	0.30	1.31
	Parapete Wall						
	Culvert-1	0	2	3.67	0.30	0.60	1.32
						Total	9.21

Assistant Engineer, SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer, SWD Dasarahalli Zone,BBMP.

Measurement recorded on 5/12/2018

Sl No	Description	Unit	No.	L	B	D	Qty
	KSRRB M 2200-5.12 : Design mix M35 sub structure with OPC cement @390kgs, with 20mm and down size graded granite metal coarse aggregates @0.68Cum and fine aggregates @0.45Cum with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 upto 5 mtrs. Upto 5 Mtrs height all leads and lifts as directed by the Engineer in charge of the work.						
	Culvert-2	Cum	2	7.50	0.30	1.60	7.20
	Hunch Concrete	Cum	4	7.50	0.3/2	0.30	1.35
	Parapete Wall						
	Culvert-2	Cum	2	3.60	0.28	0.60	1.21
						Total	9.76

Assistant Engineer, SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer, SWD Dasarahalli Zone,BBMP.

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 7/12/2018

Description	Unit	No.	L	B	D	Qty
SSRB M2100-2.1 Earth work in excavation for foundation of structures such as culverts, bridges etc., as per drawing and technical specifications,including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications in **Ordinary soil - B. Mechanical Means** (i) Depth upto 3m MORTH Specification No. 304 as directed by the Engineer in charge of the work.						
Near by culvert U-shape Drain						
At Culvert-1 Side		1	2.05	4.60	0.90	8.49
At Culvert-1 Side		1	2.30	4.40	0.85	8.60
					TOTAL	17.09

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

Measurement recorded on 7/12/2018

Description	Unit	No.	L	B	D	Qty
SSRB M2100-5.1 Earth work Excavation for foundation of structures as per drawing and technical specifications, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material complete as per specifications as per MORTH specification No.304 . in **Marshy soil upto 3m depth**(By manual means) as directed by the Engineer in charge of the work.						
Near by culvert U-shape Drain						
At Culvert-1 Side		1	2.05	4.60	1.30	12.26
At Culvert-1 Side		1	2.30	4.40	1.25	12.65
					TOTAL	24.91

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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BRUHAT BENGALURU MAHANAGARA PALIKE

Name of the work :- Construction of RCC culvert & U Shape drain for secondary SWD drains near Divya engineering works at Kammagondanahalli in Ward No.12

Measurement recorded on 10/12/2018

Description	Unit	No.	L	B	D	Qty
Providing and filling in foundation with Granite/trap broken metal 100mm and down size, with approved sand including hand packing, ramming,watering, including cost of all materials and labour with all lead and lift.complete as per specifications as directed by the Engineer in charge of the work.**(SR2018-19 P7/2.15)**						
At Culvert-1 Side		1	2.05	4.60	0.30	2.83
At Culvert-1 Side		1	2.30	4.40	0.30	3.04
					Total	5.87

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

Measurement recorded on 10/12/2018

Description	Unit	No.	L	B	D	Qty
KSRRB M2100-10 - Plain Cement Concrete **M10 with OPC** cement @ 220 kgs, with crushed 40mm and down size graded metal coarse aggregates @0.84 Cum and fine aggregates @ 0.56Cum, in foundation mechanically mixed placed in foundation and compacted by vibration including curing for 14 days complete as per specifications MORTH Specification No.2100 all leads and lifts as directed by the Engineer in charge of the work.**(SR2018-19 P222/27.18)**						
Near by culvert U-shape Drain				4.60	0.15	1.41
At Culvert-1 Side		1	2.05	4.40	0.15	1.52
At Culvert-1 Side		1	2.30		Total	2.93

Assistant Engineer,
SWD Dasarahalli Zone,BBMP.

Assistant Executive Engineer,
SWD Dasarahalli Zone,BBMP.

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